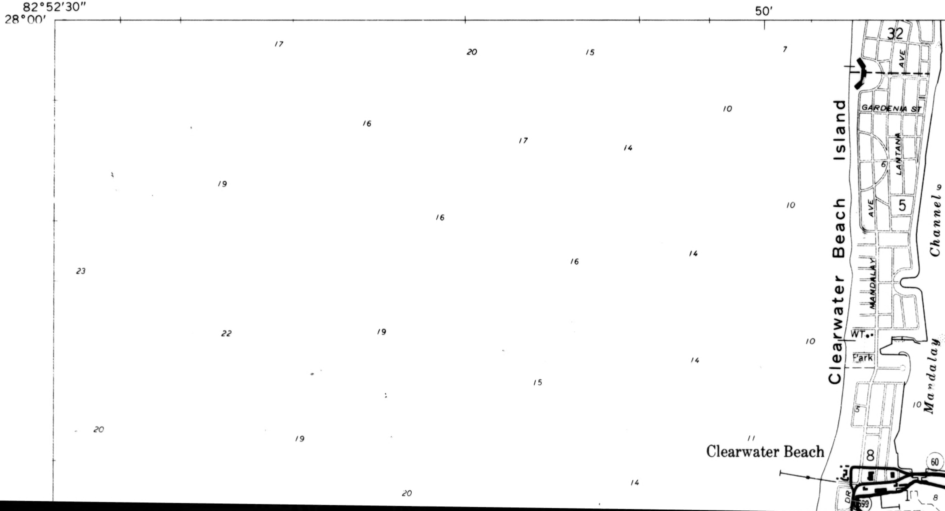
RESOLUTION TEST CHART
L0
L1
L25
L4
L5

RESOLUTION TEST CHART
L0
L1
L25
L4
L5

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

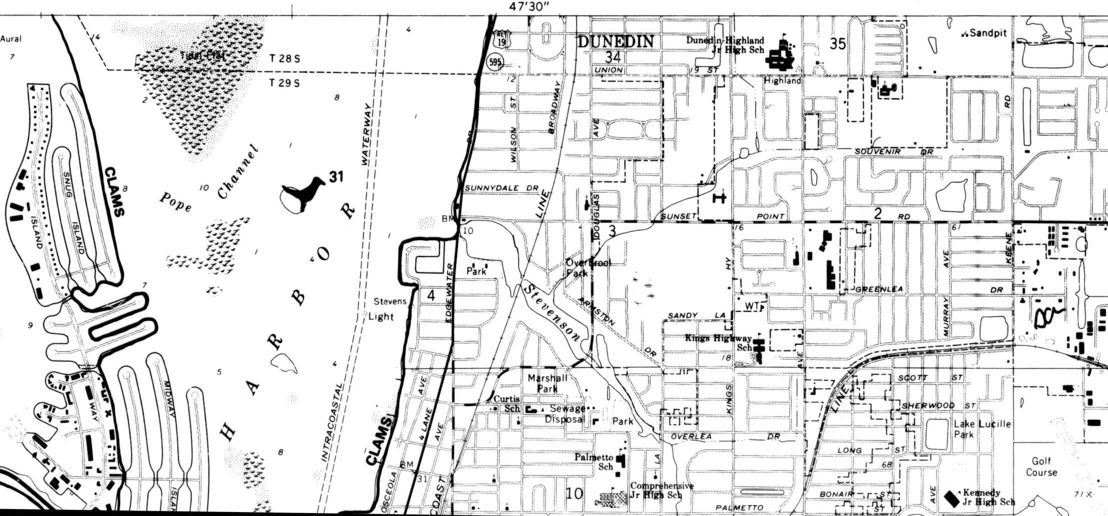

82°52′30″
28°00′
50′
17
20
15
7
32
AVE
GARDENIA ST
10
16
17
14
LANTANA
6
Clearwater Beach Island
19
10
AVE
5
9
Channel
16
23
16
14
MANDALAY
22
19
WT.
10
Park
Mandalay
14
15
5
10
20
19
11
Clearwater Beach
8
60
14
20
DR
699
8

MAY 19 '86

J573-946
(2 sets of maps)

STATE OF FLORIDA

CLEARWATER Q
FLORIDA–PIN
7.5 MINUTE SERIES



47'30"
Aural
T 28 S
T 29 S
Tidal Flat
Pope Channel
HARBOR
31
CLAMS
SNUG ISLAND
ISLAND
WAY
MIDWAY
INTRACOASTAL WATERWAY
Stevens Light
BM
DUNEDIN
34
35
UNION
19 ST
Dunedin Highland Jr High Sch
Highland
Sandpit
WILSON ST
BROADWAY
LINE
AVE
DOUGLAS
SUNNYDALE DR
SOUVENIR DR
SUNSET POINT
2 RD
RD
3
Overbrook Park
Park
Stevenson
ARMSTON DR
SANDY LA
WT
HY
GREENLEA DR
MURRAY AVE
KEENE
Kings Highway Sch
KINGS
4
EDGEWATER
Marshall Park
Curtis Sch
Sewage Disposal
Park
OVERLEA DR
SCOTT ST
SHERWOOD ST
Lake Lucille Park
LONG ST
Palmetto Sch
LA
Comprehensive Jr High Sch
10
BONAIR ST
PALMETTO
Kennedy Jr High Sch
Golf Course
OSCEOLA
4 LANE AVE
COAST
ALT 19
595

(Sep) I49.89/2:85 (15) map A1

UADRANGLE
ELLAS CO
(TOPOGRAPHIC)

82°45′
28°00′
36
Lake
Citrus
Harbor
Lake
4 LANE
AVE
588
1

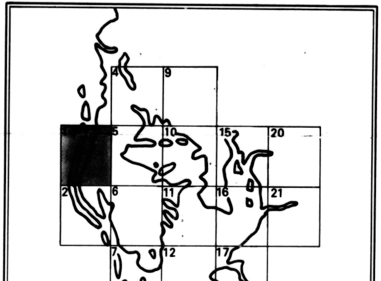
MAP A1

Biological report 85(15)
per Agency

TAMPA BAY ENVIRONMENTAL ATLAS

BIOLOGICAL RESOURCES

CLEARWATER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9
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15
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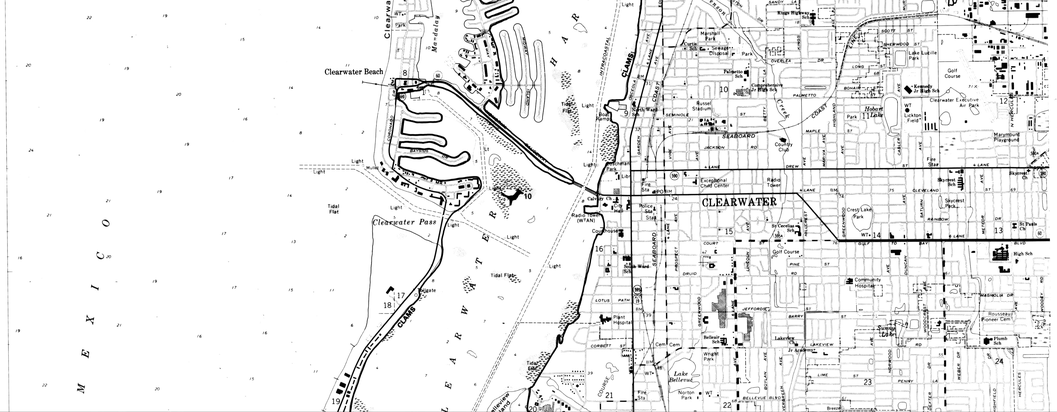
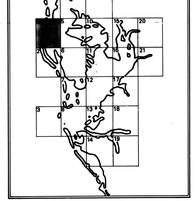
2
6
11
16
21
7
12
17





Scale 1:24,000

1984

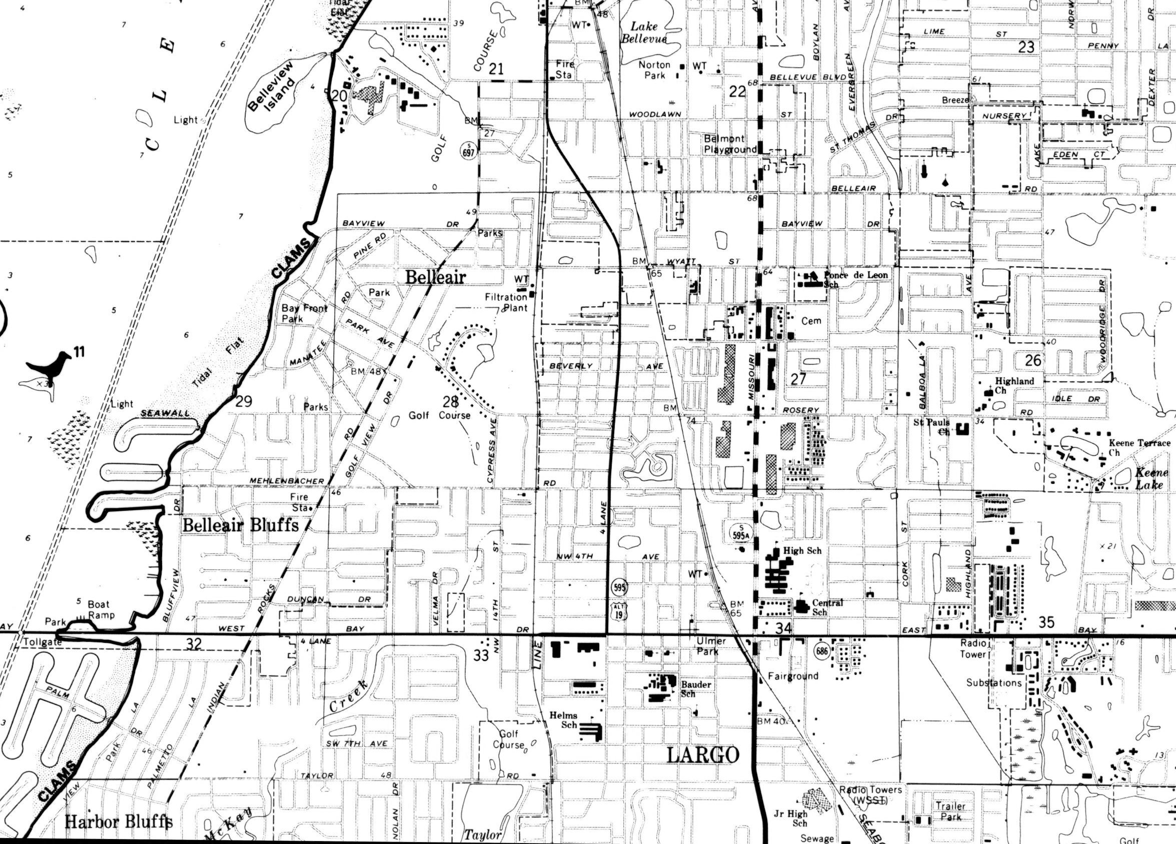
TOPICAL MAPS IN THIS ATLAS:

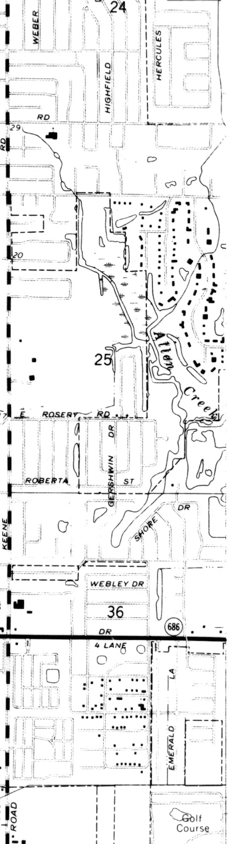
A. BIOLOGICAL RESOURCES
B. WATER RESOURCES

Produced by U.S. Fish and Wildlife Service
Projection and 1,000 meter grid, zone 17: Universal Transverse Mercator
10,000-foot grid ticks based on Florida coordinate system, east and west zones

Overlay material compiled in 1984 from latest available data obtained from Federal, State and Local government agencies and other sources.

GULF OF M
SAND KEY
19
New
BELLE ISLE AVE
SEAWALL
30
699
BAY SHORE DR
Belleair Beach
CLAMS
12TH ST
31
Hill
Townhall
WT
BELLEAIR CAUSEWA
Tidal Flat
Belleair Shores
BLVD
SEAWALL
Light
WATERWAY
36
T 29 S
T 30 S
22
20
15
11
16
17
21
19
14
18
5
4
7
0


Belleview Island
Light
Tidal Flat
CLAMS
Light
SEAWALL
Bay Front Park
Park
Belleair
Parks
WT
Filtration Plant
PINE RD
BAYVIEW DR
PARK AVE
MANATEE RD
BM 48
Golf Course
GOLF VIEW DR
CYPRESS AVE
MEHLENBACHER RD
Fire Sta
Belleair Bluffs
BLUFFVIEW DR
ROCKS
DUNCAN DR
VELMA DR
14TH ST NW
WEST BAY DR
4 LANE
Boat Ramp
Park
Tollgate
PALM
LA
DR
Park
PALMETTO
INDIAN
CLAMS
VIEW
Harbor Bluffs
McKay Creek
SW 7TH AVE
TAYLOR RD
NOLAN DR
Taylor
Golf Course
LINE
Helms Sch
Bauder Sch
LARGO
COURSE
GOLF
BM
697
Fire Sta
WT
Lake Bellevue
Norton Park
WT
BELLEVUE BLVD
WOODLAWN ST
Belmont Playground
BELLEAIR RD
BAYVIEW DR
WYATT ST
BM
Ponce de Leon Sch
Cem
BEVERLY AVE
MISSOURI
ROSERY
BM
4 LANE
595A
595
19
ALT
NW 4TH AVE
WT
BM 65
High Sch
Central Sch
Ulmer Park
Fairground
686
BM 40
Radio Towers (WSST)
Jr High Sch
Sewage
SEABO
BOYLAN
EVERGREEN
ST THOMAS DR
LIME ST
PENNY LA
NORW
DEXTER
Breeze
NURSERY
LAKE
EDEN CT
WOODRIDGE DR
Highland Ch
IDLE DR
RD
St Pauls Ch
BALBOA LA
Keene Terrace Ch
Keene Lake
ST
CORK
HIGHLAND
EAST BAY
Radio Tower
Substations
Trailer Park
Golf
20
21
22
23
26
27
28
29
32
33
34
35
11
AVE
DR


24
WEBER
HERCULES
HIGHFIELD
RD
29
RD
20
25
Allen
Creek
E ROSERY RD
GERSHWIN DR
ROBERTA ST
DR
SHORE
KEENE
WEBLEY DR
36
686
DR
4 LANE
LA
EMERALD
ROAD
Golf Course

Projection and 1,000 meter grid, zone 17: Universal
Transverse Mercator
10,000-foot grid ticks based on Florida coordinate
system, east and west zones

Overlay material compiled in 1984 from
latest available data obtained from
Federal, State and Local government
agencies and other sources.

There are no maps A19, A20, A21 due to a lack of data.

LEGEND

SHELLFISH HARVEST AREA
(Florida Dept. of Natural Resources)

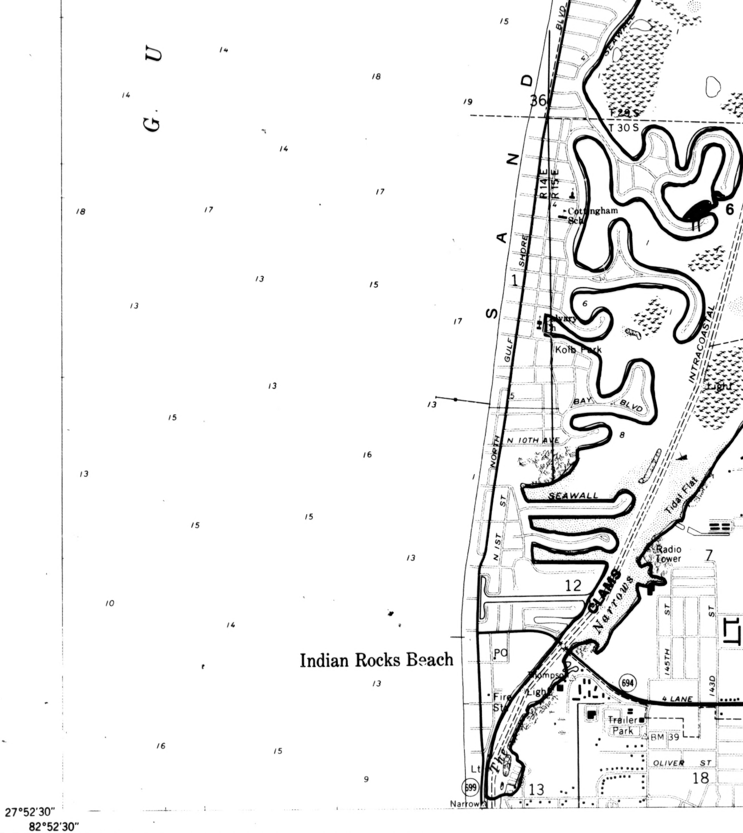
SHA	Shellfish Harvest Approved
SHCA	Shellfish Harvest Conditionally Approved

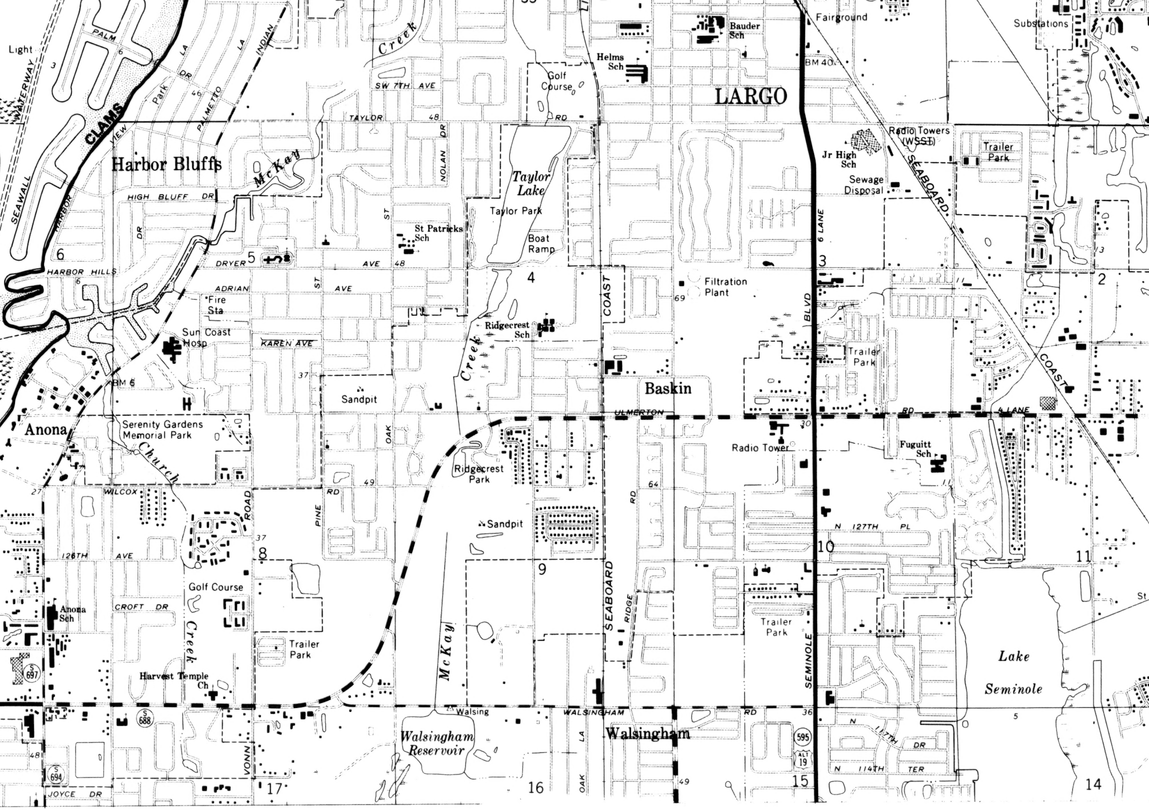
NOTE: Due to Dept. of Natural Resources (DNR) water quality standards all other estuarine areas are prohibited or unclassified as to shellfish harvest status and are officially unapproved. For further info. on status of harvest areas contact DNR - Shellfish Environmental Assessment Section.

Oys-1	Public Oyster Bed
Oys-2	Private Oyster Bed (Lease)
CLAMS	Clam Bed

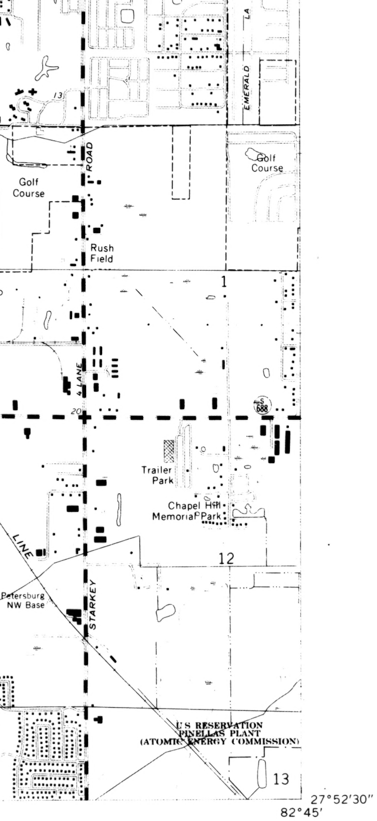
FINFISH SPAWNING, NURSERY AND HARVEST AREAS
(Recreational Hook and Line Fishing)

SPECIES #	FINFISH	SPAWNING													NURSERY AREA[1]	MAJOR NURSERY HABITATS							AREA OF ADULT ABUNDANCE[1]	MAJOR ADULT HABITATS						MIGRATION TYPE[2]
	CATEGORY Common Name	LOCATION[1]	SEASON													Seagrass	Mangrove	Saltmarsh	Beach	Coral Reef	Artificial Reef	Open Water		Seagrass	Mangrove	Beach	Coral Reef	Artificial Reef	Open Water	
			J		M		M		J		S		N																	
	ESTUARINE DEPENDENT FISHES																													
1	Red Drum	C	■	■							■	■	■	■	E	●	●	●					E	●	●	●				2


G.
U
S
A
N
D
GULF
SHORE
BLVD
NORTH
36
1
T 29 S
T 30 S
R 14 E
R 15 E
Cottingham Sch
Calvary Ch
Kolb Park
BAY BLVD
N 10TH AVE
SEAWALL
N 1ST ST
INTRACOASTAL
Light
Tidal Flat
Radio Tower
6
7
12
13
18
CLAMS
The Narrows
Indian Rocks Beach
PO
Fire Sta
Thompson Light
694
4 LANE
Trailer Park
BM 39
OLIVER ST
145TH ST
143D ST
Lt
699
Narrows
27°52'30"
82°52'30"


Light
3
WATERWAY
PALM
6
CLAMS
Park
LA
DR
46
PALMETTO
LA
INDIAN
Creek
SW 7TH AVE
Golf Course
Fairground
Bauder Sch
Helms Sch
BM 40
LARGO
Substations
TAYLOR
48
RD
VIEW
Harbor Bluffs
McKay
NOLAN DR
Taylor Lake
Taylor Park
Boat Ramp
Radio Towers (WSST)
Jr High Sch
Sewage Disposal
SEABOARD
Trailer Park
SEAWALL
HARBOR
HIGH BLUFF DR
DR
ST
St Patricks Sch
6 LANE
6
DRYER
5
AVE
48
4
3
13
2
HARBOR HILLS
6
ADRIAN
ST
AVE
Fire Sta
Filtration Plant
69
COAST
BLVD
Sun Coast Hosp
KAREN AVE
Ridgecrest Sch
Creek
Trailer Park
COAST
BM 6
37
Sandpit
Baskin
ULMERTON
RD
4 LANE
30
Anona
Serenity Gardens Memorial Park
Church
OAK
Radio Tower
Fuguitt Sch
Ridgecrest Park
27
WILCOX
49
RD
PINE
64
RD
ROAD
Sandpit
N 127TH PL
11
37
126TH AVE
8
9
10
11
Golf Course
Anona Sch
CROFT DR
Creek
SEABOARD
RIDGE
Trailer Park
St
McKay
Trailer Park
SEMINOLE
Lake Seminole
S 697
Harvest Temple Ch
Walsing
WALSINGHAM
RD
36
S 688
5
N 117TH DR
Walsingham Reservoir
Walsingham
595
ALT 19
LA
VONN
481
S 694
N 114TH TER
OAK
49
17
16
15
14
JOYCE DR

SCALE 1:24000


LA
EMERALD
13
ROAD
Golf Course
Golf Course
Rush Field
1
4 LANE
20
S 688
Trailer Park
Chapel Hill Memorial Park
LINE
12
Petersburg NW Base
STARKEY
U S RESERVATION PINELLAS PLANT (ATOMIC ENERGY COMMISSION)
13
27°52'30"
82°45'

FINFISH SPAWNING, NURSERY AND HARVEST AREAS

(Recreational Hook and Line Fishing)

SPECIES #	FINFISH CATEGORY Common Name	SPAWNING													NURSERY AREA[1]	MAJOR NURSERY HABITATS							AREA OF ADULT ABUNDANCE[1]	MAJOR ADULT HABITATS						MIGRATION TYPE[2]
		LOCATION[1]	SEASON													Seagrass	Mangrove	Saltmarsh	Beach	Coral Reef	Artificial Reef	Open Water		Seagrass	Mangrove	Beach	Coral Reef	Artificial Reef	Open Water	
			J		M		M		J		S		N																	
ESTUARINE DEPENDENT FISHES																														
1	Red Drum	C	■	■							■	■	■	■	E	●	●	●					E	●	●	●				2
2	Spotted Seatrout	E			■	■	■	■	■	■	■	■			E	●	●	●					E	●	●					2
3	Snook	C					■	■	■						E	●	●	●					E	●	●					2
4	Sheepshead	C			■	■	■								C	●							C-E			●		●		1
5	Southern Flounder	C									■	■	■	■	C-E	●			●				C-E	●		●				2
6	Florida Pompano	CS				■	■	■	■	■	■	■			C-E				●				C-E			●			●	3
7	Striped Mullet	CS	■									■	■	■	E	●	●	●					E	●	●	●				3
8	Gulf Menhaden	C	■	■	■								■	■	E	●	●	●					C-E	●		●			●	3
9	Spanish Sardine	C						■	■	■	■				E	●	●	●					C-E	●		●			●	3
10	Black Drum	C	■	■	■	■	■						■	■	E	●	●	●					E	●	●	●				1
REEF FISHES																														
11	Red Grouper	CS			■	■	■	■							CS-C	●				●	●		CS				●	●		2
12	Jewfish	CS							■	■					CS-C	●				●	●		CS-C				●	●		2
13	Gag Grouper	CS	■	■	■	■								■	CS-C	●				●	●		CS-C				●	●		2
14	Scamp	CS			■	■									CS	●				●	●		CS				●	●		2
15	Red Snapper	CS							■	■	■	■			CS-C	●				●	●		CS-C				●	●		2
16	Mangrove Snapper	CS				■	■	■	■	■					C-E	●	●						C-E				●	●		2
COASTAL PELAGIC FISHES																														
17	King Mackerel	OCS					■	■	■	■	■				CS							●	CS-C				●	●	●	4
18	Spanish Mackerel	CS					■	■	■	■	■				CS							●	CS-C				●	●	●	4

[1] KEY:

E — Estuarine
C — Coastal
CS — Continental Shelf
OCS — Outer Continental Shelf

[2] MIGRATION TYPE:

1 — Residentially Restricted
2 — Random Residential Range
3 — Restricted Migration
4 — Extensive Migration

COLONIAL BIRD NESTING SITE *

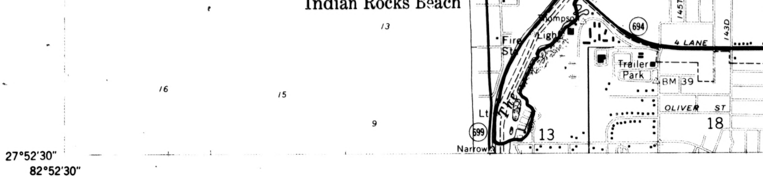
Number appearing with symbol indicates colony sites. Colony sites and species - composition data are included in the narrative.

Shorebird

Wading Bird

Brown Pelican

WEST INDIAN MANATEE HABITAT


Indian Rocks Beach
13
16
15
9
Thompson
Fire St
Light
The Narrows
694
699
4 LANE
Trailer Park
BM 39
OLIVER ST
13
18
145T
143D
Lt
27°52'30"
82°52'30"

THE TAMPA BAY ENVIRONMENTAL ATLAS WAS PRODUCED BY THE U.S. FISH AND WILDLIFE SERVICE, DIVISION OF BIOLOGICAL SERVICES NATIONAL COASTAL ECOSYSTEMS TEAM (FWS/OBS) FOR COASTAL PLANNERS, DECISION MAKERS AND THE GENERAL PUBLIC, TO DETERMINE AND EVALUATE CHANGE AND TO RESOLVE CONFLICTS AMONG LAND USES, FISH AND WILDLIFE REQUIREMENTS AND THE MAINTENANCE OF ECOLOGICAL DIVERSITY. THE STUDY AREA INCLUDES A MAJOR PORTION OF THE COASTAL COUNTIES OF PINELLAS, HILLSBOROUGH, MANATEE, AND A SMALL PORTION OF SARASOTA. THERE IS NO ATTEMPT, IN THE DESIGN OR PRODUCTS OF THIS STUDY, TO DEFINE THE LIMITS OF PROPRIETARY JURISDICTION OF ANY FEDERAL STATE, OR LOCAL GOVERNMENT TO ESTABLISH THE GEOGRAPHICAL SCOPE OF THE REGULATORY PROGRAMS OF GOVERNMENT AGENCIES.

THIS MAP HAS BEEN COMPILED FROM A VARIETY OF SOURCE MATERIALS INCLUDING MAPS, AERIAL PHOTOS, AND REPORTS. SINCE MANY SOURCES CONTAINED GENERALIZED LOCATIONS OF RESOURCES AND OTHER MAPPED FEATURES, THE USER SHOULD NOT RELY ON THESE MAPS FOR PRECISE MEASUREMENTS OF DISTANCES OR AREAS.

Selected areas on this U.S.G.S. base map updated using information extracted from aerial photography. This information not field checked.

PRIMARY SOURCES OF MAPPED INFORMATION:

SHELLFISH HARVEST AREAS: Shellfish Harvest Area Maps, Dept. of Natural Resources, 1982

PUBLIC & PRIVATE OYSTER BEDS: Cooperative Gulf of Mexico Estuarine Inventory and Study, Florida, McNulty, Lindall and Sykes, 1972.

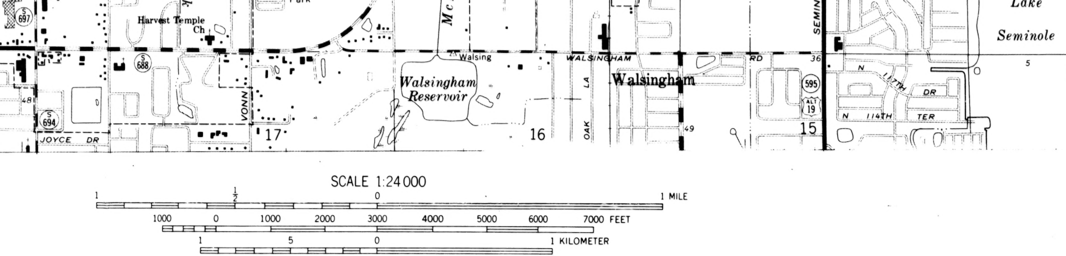
CLAMS: Personal Communication, Discussion of Distribution Clams in Tampa Bay and Adjacent Brackish Waters, Mr. L. Tracy Three T's Clam Company, 1983 Mike Sprague, Draft Maps, Department of Natural Resources, 1984

SCALLOP BEDS: Personal Communication Mr Bill Lyons Dept. of Natural Resources, Marine Research Laboratory, 1982

FINFISH SPAWNING, NURSERY & HARVEST AREAS: Florida's Fishing Grounds, Moe, 1970.

BIRD NESTING SITES: Florida Atlas of Breeding Sites for Herons and Their Allies: 1976-78, Nesbitt, S.A., Ogden, J.C., Kale II, H.W., et.al. U.S Fish and Wildlife Service, 1982. Personal Communication, Maps and Data, Dr H.W Kale II, Florida Audubon Society, 1982

MICROCOPY RESOLUTION TEST CHA
NBS 1010a
(ANSI and ISO TEST CHART No.

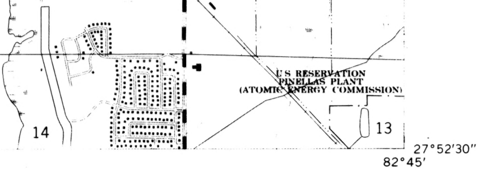

Harvest Temple Ch
S 697
S 688
S 694
481
JOYCE DR
VONN
17
Walsing
Walsingham Reservoir
16
WALSINGHAM RD
OAK LA
Walsingham
49
595
ALT 19
15
36
SEMIN
N 117TH DR
N 114TH TER
Lake Seminole
5
SCALE 1:24 000
1 ½ 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 5 0 1 KILOMETER

MANATEE HABITAT: Boaters guide to Manatees, the gentle giants, Florida Marine Patrol, 1980.

SEAGRASS BEDS: Tampa Bay Seagrass Maps, 1 10,000 and 1:24,000 Scales, Mangrove Systems Inc 1980
National Wetlands Inventory Maps, 1:24,000 Scale, U.S. Fish and Wildlife Service, 1983.

ARTIFICAL REEFS: Computer Printout of Florida Artifical Reefs, U.S. Army Corps of Engineers, 1981. Recreational Use Reefs in Florida. Artifical and Natural, Florida Sea Grant Program, 1979.

FOR COMPLETE REFERENCE SEE MAP NARRATIVE


U S RESERVATION
PINELLAS PLANT
(ATOMIC ENERGY COMMISSION)
14
13
27°52'30"
82°45'

colony sites. Colony sites and species - composition data are included in the narrative.

Shorebird

Wading Bird

Brown Pelican

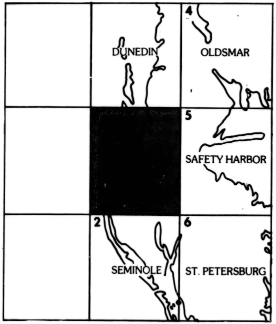
WEST INDIAN MANATEE HABITAT

STATE MANATEE SANCTUARY

▨ **SEAGRASS BEDS**

■ **ARTIFICAL REEF***
(Permitted by Florida Dept. of Environmental Regulation)
Numbers next to reefs refer to composition data in narrative

Symbols appearing with numbers are described more fully in the narrative.


DUNEDIN
4
OLDSMAR
5
SAFETY HARBOR
2
SEMINOLE
6
ST. PETERSBURG

MICROFILMED FROM
BEST AVAILABLE COPY

ICROCOPY RESOLUTION TEST CHART
NBS - 1010a
ANSI and ISO TEST CHART No. 2)

2.5
2.8
2.2
3.2
2.0

RESOLUTION TEST CHART
1.0
1.1
1.25
1.4
1.6

RESOLUTION TEST CHART
1.0
1.1
1.25
1.4
1.6